

REMARKS

Reconsideration and withdrawal of the Examiner's rejections under 35 USC §103 and §112 is requested in view of the foregoing amendments and the following remarks.

Re-examination of the claims and reconsideration and withdrawal of the Examiner's rejections is requested in view of the foregoing amendments and the following remarks.

37 CFR 1.81

Points 2 and 3

A formal drawing including Figure 1 is submitted herewith. This drawing does not add any new matter because all of the parameters are completely described on page 3 and page 4 first paragraph of the instant application. Moreover reference was made to the general principles of an extruder as described in 'Engineering principles of plasticating extrusion' pages 39 to 45, on page 3, lines 9 to 11 of the specification, a copy of which is enclosed. The drawing on these pages is fully representative of Figure 1 and provides further additional support for this.

35 U.S.C. 112

Point 6

New claims have been submitted wherein narrow ranges within broad ranges have been removed.

The word 'preferably' has also been removed from all claims.

Point 7

An extruder always comprises a barrel and a screw. Since what is claimed is an extruder, it was considered that reference to a barrel in the claim was not necessary, nevertheless in order to avoid any ambiguity, a barrel is now positively recited in the claims.

35 U.S.C. 102

Point 9

A new claim 1 is submitted which renders this rejection moot.

Applicants' wish to point out, with regard to original claim 6, that despite the fact that in '781, it is disclosed that the screw disclosed in Figure 8 has a H/Wc ratio of 0.1, this does not appear to be the case when measuring these parameters on Figure 8, thus establishing that it is not possible to infer any ratio from a patent drawing.

Point 10

Claim 1 amended renders this objection moot.

35 U.S.C. 103

Point 12

New claim 1 is limited to a pitch angle of 32 to 42 degrees. This is not disclosed in '781 and there is no disclosure in the prior art suggesting that ice cream will in any way better processed using a screw with a higher pitch angle. There was thus no incentive to move outside the normally accepted range as disclosed in '781.

In other respect, there is no disclosure in the prior art that there is no benefit in having a long screw and that, when processing ice cream, it is actually a disadvantage. There is thus no disclosure in the prior art of a LT/De ratio as claimed in claim 5.

Point 13

It is submitted that in the absence of any positive statement in the document one cannot infer from a patent drawing any dimension or any ratio. In fact, in Hockerson-Halberstadt Inc. v. Avia Group International Inc. (55 USPQ2d page 1491, it is said:

"HHI's argument is unavailing. The '792 patent is devoid of any indication that the proportions of the groove and fins are drawn to scale. Under our precedent, however, it is well established that patent drawings do not define the precise proportions of the elements and may not be relied on to show particular sizes if the specification is completely silent on this"

See also *In re Wright*, 569 F.2d, 1124, 1127, 193 USPQ 332, 335 (CCPA 1977).

Indeed, the earlier comment made under point 9 already established this point. Looking at '305, not only there is no indication that the drawings are drawn to scale but what is disclosed on column 2 lines 50-52 is in contradiction with Figure 1, establishing that, indeed the drawings are not drawn to scale. Therefore, it is not possible to rely on the drawings in '305 to infer any LT/De ratio.

It is therefore submitted that this rejection is rendered moot.

Point 14

There is no reason to believe that any person skilled in the art would have any reason to combine Fels and Bushman rather than two other documents. The combination of Fels and Bushman constitutes an ex post facto analysis done with the benefit of the hindsight knowledge of the present invention. In fact moreover, even if such a combination was considered by a person skilled in the art, some mechanical considerations would make it impossible.

For example Fels discloses a twin screw system whereas Bushamn discloses a single screw one, when wanting to combine the two, what would be chosen, a single screw or a twin screw?

Fels urges for the use of a pitch angle of between 20 and 30 degrees, Bushman discloses a pitch angle of 45 degrees.

Finally, Bushman might disclose the fact that increasing the number of thread starts might be beneficial but it does not disclose that there is a definite optimal number of thread starts as the table on page 8 of the present application establishes. For a pitch angle of 40 degrees, the lowest temperature was achieved with 4 thread starts, not 6.

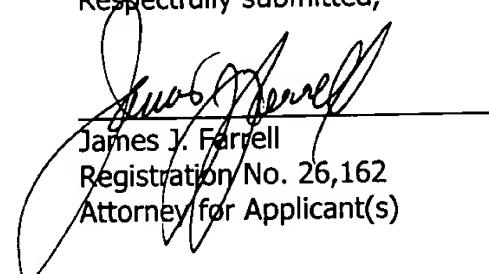
There is thus no reason to believe that anyone would ever consider combining the teachings of Fels and Bushman and even if it was done and if the mechanical contradictions already exposed were resolved, the only conclusion which would be reached would be to go for 10 thread starts, not 3 or 4.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attachment is captioned "Version With Markings To Show Changes Made".

Also attached is a clean version of pending claims marked "Clean Version Of Entire Set Of Pending Claims".

In view of the foregoing amendments and remarks, early favorable action is solicited.

Respectfully submitted,


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VERSION WITH MARKINGS TO SHOW CHANGES MADE

1. (Amended) Extruder comprising an extruding screw and a barrel, said extruding screw being characterized by between 2 and 6 thread starts and a pitch angle of between 28 and 45 degrees, preferably between 32 and 42 degrees.
5. (Amended) Extruder according to claim 1 wherein the with a screw LT/De ratio of between 2 and 10, preferably between 2 and 5, more preferably between 2 and 4.
6. (Amended) Extruder according to claim 1 wherein the H/wc ratio is under 0.2, preferably over 0.1.
8. (Amended) Extruder comprising an extruding screw and a barrel characterized by a pitch angle of between 28 and 45 degrees, preferably 32 and 42 degrees, and a LT/De ratio of between 2 and 10, preferably between 2 and 5, more preferably between 2 and 4.
12. (Amended) Extruder according to any preceding claim 8 to 14 wherein the extruder is a single screw extruder.

Please insert the following claims 15 through 19.

15. Extruder according to claim 1 with a screw LT/De ratio of between 2 and 5.
16. Extruder according to claim 8 wherein the H/wc ratio is over 0.1.
17. Extruder comprising an extruding screw and a barrel characterized by a pitch angle of between 28 and 45 degrees and a LT/De ratio of between 2 and 5.
18. Extruder comprising an extruding screw and a barrel characterized by a pitch angle of between 28 and 45 degrees and a LT/De ratio of between 2 and 4.

19. Extruder according to claim 17, characterized by a pitch angle of between 32 and 42.